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ABSTRACT

Worldwide there is great variation in how licensing young people to drive is handled. The minimum age for regular licensure varies, generally from 15 to 18 years. Prerequisites and conditions for licensure vary. Some licensing policies are more effective than others in controlling injuries associated with youthful driving; crashes involving young drivers constitute a major public health problem in every motorized society in the world. The first year of licensed driving is the riskiest of all. Inexperienced drivers of any age have a higher crash risk than more experienced drivers of the same age, but youthful age itself is strongly associated with crash risk. In setting licensing policies, societies are deciding how to handle the tradeoff between safety for young drivers (and others that share the road with them) and the mobility needs and desires of young people. Restrictive measures on youthful drivers reduce the crash and injury problem. Restrictive measures used throughout the world include: night driving curfews; prohibitions against driving on expressways; lower maximum speeds; and restrictions on carrying passengers without an adult present. Graduated licensing is a system that starts with a learners permit and systematically lifts restrictions under the rationale that there is no substitute for on-the-road driving as a means of gaining experience. Contains 23 references. (JBJ)

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Restrictive Measures for Young, Beginning Drivers

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Worldwide there is great variation in how licensing young people to drive is handled. The minimum age for regular licensure varies, generally from 15 to 18. Prerequisites for licensure also vary. Vision, knowledge, and road tests are typically required, but there are differences in the difficulty of the road test, the length of time provided for supervised driving practice prior to licensure, and whether formal driver education is required. Conditions on initial licensure also vary. Some jurisdictions place no restrictions on young drivers once licensed. Others impose a variety of restrictions on the beginning phase of licensed driving, governing such factors as where, when, and with whom driving can take place.

Not only is there great variation in licensing policies around the world, but within the United States, each state sets its own licensing regulations. One state allows licensing at age 14, and five states license at age 15. The rest allow licensure at age 16, except for New Jersey, which has a licensing age of 17. Nine states impose night driving curfews during the early stages of licensed driving, including New York State, which has the earliest starting time in the world for a driving curfew (9 p.m.). Most states, on the other hand, allow full driving privileges upon licensure.

Some licensing policies are more effective than others in controlling injuries associated with youthful driving, but whatever schemes are in place, crashes involving young drivers constitute a major public health problem in every motorized society in the world. The first year of licensed driving (which typically occurs during the sixteenth year in the United States) is the riskiest of all. This is readily illustrated in the United States using mileage data from the 1990 Nationwide Personal Transportation Survey and a 1990 national probability based sample of police-reported crashes of all levels of severity. Teenage drivers — ages 16-19 — had the highest crash rate of all drivers, 20 reported crashes per million miles driven, compared with a rate of 5 crashes for all other ages combined. However, the rate for 16 year-olds was by far the highest (43), followed by 17 year-olds (30). Older teenage drivers had substantially lower crash involvement rates: 16 for 18 year-olds and 14 for 19 year-olds.

We basically know the reasons for the greatly elevated crash rates of the youngest drivers. They are, first of all, inexperienced at the driving task and share the characteristics of all beginning drivers. For example, their search and scan abilities are less well developed than those of more experienced drivers. It is more difficult for them to monitor the driving environment while

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maneuvering a vehicle, and to take appropriate actions. As a result, inexperienced drivers are less able to detect imminent hazards, more likely to perceive hazardous situations as less dangerous than they really are, and less adept at performing driving actions necessary to cope with hazardous situations once they arise (Matthews and Moran, 1986; Quimby and Watts, 1981; Groeger and Brown, 1989; Brown and Groeger, 1988).

Inexperienced drivers of any age have a higher crash risk than more experienced drivers of the same age, but youthful age is itself strongly associated with crash risk (Mayhew and Simpson, 1990). The manifestations of beginning driving combine in a lethal way with characteristics associated with youthful age. That is, as a group, young people as drivers are more aggressive than others. For example, they are more likely to drive fast, follow too closely, and accelerate rapidly (Bergeron, 1991; Romanowicz and Gebers, 1990; Jonah, 1986). This less cautious approach to driving can be exacerbated by the presence of other young people in the car, who may provide distraction and promote thrill seeking and other driving behaviors that increase risk. The driving styles of young people, combined with inexperience and peer pressure, heighten their crash risk, yet youthful drivers are more likely than older drivers to overestimate their capabilities and to downplay the likelihood of their being in a crash (Finn and Bragg, 1986). The maturation process brings with it more responsible behavior involving judgment, decision making, and actions. Not all adolescents display immature behavior when driving, but many combine their lack of experience with high risk driving styles, along with a feeling of invincibility.

In setting licensing policies, what societies are deciding — whether or not this is made explicit — is how to handle the tradeoff between safety for young drivers and others that share the road with them, and the mobility needs and desires of young people. Note that mobility includes more than merely transportation. The ability to drive without adult supervision brings with it independence and freedom, along with peer recognition. Getting a driver's license as early as possible is a goal of most teenagers, and it is an event of great importance and significance to them.

In general, licensing policies that enhance safety compromise mobility and vice versa. The United States can be characterized as a country in which the mobility/safety tradeoff has been decided in favor of mobility. Not only are licenses allowed earlier than in many other countries — generally one or two years earlier — but licenses are also inexpensive and easy to get, there is widespread and easy access to passenger vehicles, and the costs of driving are relatively low. Prior to licensure, most states allow for but generally do not require a certain amount of supervised driving. In many states, the system is set up so that licenses can be obtained during the first month

of the 16th year, and many obtain licenses on their 16th birthday, or very shortly thereafter. Thus, although states differ some in this regard, in the United States very young, very inexperienced drivers are allowed to be licensed, and generally the licenses bestow full driving privileges immediately, without restrictions. Formal driver education, either high school or professional instruction, is required in a few states and available generally. And for newly licensed drivers, many states have adopted more stringent penalties for them and/or penalties that apply after fewer violations than would be the case for older drivers.

There is strong reliance on, and belief in, driver education courses in the United States. The overall system can be described as one in which young people are taught to drive, given full driving privileges at a young age, and punished if they do not perform adequately. The reliance on driver education as an important step in readying young people to drive exists despite evidence from research studies that it confers no advantage to those who take high school driver education in terms of subsequent crash involvement (Robertson and Zador, 1978; Shaoul, 1975; Robertson, 1980; Lund, Williams, and Zador, 1986). As concluded in a 1994 Report to Congress, experts are in agreement that "Current novice driver education is not doing a very good job in motivating youngsters to drive safely" (National Highway Traffic Safety Administration, 1994).

In contrast, we know that restrictive measures on youthful drivers reduce the crash and injury problem. It is, of course, a truism that if you keep drivers off the road, they will not get into crashes. There are many types of restrictive measures, including not allowing licensure until a higher age has been reached. The only question concerning the safety benefits of this policy is whether this does not to some extent simply defer the problem, because of the experience factor. That is, if the licensing age were raised from 16 to 17, 17 year-olds would be inexperienced drivers compared with 17 year-olds in states where licensing was not allowed at age 16. There is suggestive though not conclusive evidence that New Jersey 17 year-olds have somewhat worse crash experience than 17 year-olds in neighboring states, which could be the result of their relative inexperience (Williams, Karpf, and Zador, 1984; Ferguson et.al., 1994). However, eliminating virtually all crash involvement during the 16th year makes New Jersey's higher licensing age a highly effective policy.

Restrictive measures more commonly refer to conditions regarding where, when, and with whom driving can be done by those who have an initial license. Measures that have been used throughout the world include night driving curfews, prohibitions against driving on expressways (Ontario, Canada), lower maximum speeds (80 vs. 100 km/hr in some Australian states), and

restrictions on carrying passengers without an adult present (New Zealand). A lower blood alcohol concentration (BAC) criterion for young, beginning drivers than for older drivers is another type of restriction in wide use in the United States.

Night driving curfews are the most frequently used restriction and the most effective. The rationale for a night driving curfew is that the driving task is more difficult at night because of limited visibility, plus high risk driving by young beginners is most likely to take place during nighttime hours, when much of the driving is for recreational purposes. (Most U.S. curfews allow exemptions for driving to and from work or school, or if with an adult.) Studies in the United States have found crash reductions of greater than 50 percent during curfew hours in states with strong curfews, such as New York and Pennsylvania (Preusser, Williams, and Zador, 1984; Ferguson et al., 1994). There appear to be no negative side effects of curfews in crash reductions. Crashes have been found to be somewhat higher just before the curfew starts as 16 year-olds are getting home, but the positive effects persist in the hours after the curfew ends. And there is no detectable effect of shifting crash involvements and injuries during curfew hours to travel as passengers in the cars of older drivers.

The presence of other teenagers in the car, which can provide distraction and promote driving behaviors that heighten risk, creates a particular problem for beginning, inexperienced drivers. In the United States, two-thirds of the deaths of teenagers as passengers in cars occur in vehicles driven by teenage drivers (Williams and Wells, 1994). Sixteen year-old drivers, who have the highest crash rate per mile driven of all drivers, contribute particularly to the deaths of teenage passengers; more teenagers die in their vehicles than in vehicles driven by 17, 18, or 19 year-olds. In 1993, teenage passengers and no adults were in the vehicles in 54 percent of the fatal crashes of 16 year-old drivers, compared with 44 percent for 17 year-olds and 31 percent for 18-19 year-old drivers (Williams, et al., 1994). New Zealand's provision that beginning license holders may not transport passengers unless an adult is present is designed to prevent teenagers transporting exclusively other teenagers. This provision has been found to reduce teenage passenger injuries in vehicles driven by other teenagers (Frith and Perkins, 1992).

Among the restrictions on young drivers that have been tried, curfews are extremely effective at controlling crashes, prohibitions against carrying teenage passengers have been effective in the one instance where introduced, and there is no available evidence concerning what speed restrictions and prohibitions against driving on expressways accomplish.

Restrictive measures may be effective, but are they fair to young people? Certainly they are viewed by some as being unfair. Indeed, the term "restriction" implies that something is being taken away from someone, which can lead to the conclusion that there is an infringement of people's rights and freedoms. On the other hand, phasing in driving privileges for new drivers can be viewed as a protective system, one that allows them to acquire initial experience under conditions of lower risk. And restrictions do not last throughout the teen years. They apply only during the early stages of licensed driving, when the young driver is a beginner and most needs protection while gaining experience.

Restrictions are featured in graduated licensing systems, a recent licensing trend that has been introduced in New Zealand (1987), Victoria, Australia (1990), and in two Canadian provinces: Ontario (1993) and Nova Scotia (1994). Graduated licensing is basically a three-stage system, starting with a learner's permit period that involves driving under supervision for a set period of time. Once the learner's period has been completed, a restricted license is issued that allows driving without adult supervision in some circumstances but not others. Restrictions are gradually and systematically lifted provided the driver remains violation and crash-free, and the third stage is an unrestricted license. The rationale for graduated licensing is that there is no substitute for on-the-road driving as a means of gaining driving experience but that it makes sense for the earliest driving experience to be gained under low risk, forgiving conditions. The incentive to gain a full license is likely an important factor influencing restricted drivers to obey the restrictions, and to refrain from driving behaviors that typically get young beginners in trouble on the roads, such as speeding (Williams, et al., 1994).

The four graduated licensing systems now in existence differ in their provisions and restrictions. Three have night driving curfews, a key provision of any graduated licensing system. New Zealand's system has resulted in reductions in crashes and injuries among 15-19 year-olds (Frith and Perkins, 1992). The Canadian systems are too recent to evaluate, and no evaluation studies have been published on Victoria's graduated licensing system. No state in the United States has a full-fledged graduated licensing system, although some have elements of one and many states are now considering graduated licensing.

In surveys, adults — particularly parents of teenagers — are in favor of graduated licensing and restrictions such as night driving curfews. In the most recent national telephone survey conducted in November 1994, 74 percent of parents of 17 year-olds were in favor of night driving curfews for beginning drivers (Insurance Institute for Highway Safety, 1994). Of those in favor, 48

preferred a curfew starting time of 10 p.m. or earlier. This is important because the fatal crashes of 16-year-old drivers in the United States, to whom curfews would primarily apply, occur more often between 10 p.m. and midnight than after midnight (Williams et al., 1994).

There was less support in the survey of parents of 17 year-olds for prohibitions on carrying exclusively teenage passengers; 43 percent said they favored this restriction. However, the majority (58 percent) said they were in favor of a graduated licensing system that included many months of supervised practice, night driving curfews, and 6-12 months prohibition against carrying teenage passengers (Insurance Institute for Highway Safety, 1994).

Young people themselves exhibit surprising support for restrictions that are in place. A telephone survey of 16-18 year-olds in four curfew states indicated that in three of the four states the vast majority said that they were "in favor of some kind of night driving curfew for beginning teenage drivers" (Illinois: 63 percent; Indiana: 47 percent; New York: 67 percent; Pennsylvania: 80 percent) (Opinion Research Corporation, 1985). In New Zealand, teenagers were interviewed at age 15 when the graduated licensing system was first introduced and before they had begun licensure and at age 18 after they had gone through the system. On the basis of these interviews, the authors state, "Overall, these young drivers were positively disposed towards the driving restrictions" (Begg, Langley, and Chalmers, 1994).

The engine of graduated licensing systems is restrictions on high risk driving situations, during the initial stages of licensure. Surveys indicate that there is recognition of the logic and importance of some restrictions on young, beginning drivers as they begin to master the complex task of negotiating the roads. This does not mean that parents necessarily want restrictions to apply to their own children or that teenagers want restrictions to apply to them. Where restrictions exist, however, there is accommodation to them.

Many of the major safety organizations in the United States are now advocating graduated licensing, and the federal government is urging states to adopt such systems. When restrictions such as night driving curfews have been considered in the United States in the past, they have not gotten far. Although there is accommodation to curfews where they exist, they are necessarily introduced in the context of taking away something that teenage drivers now have, and receive little support. It will be interesting to see whether the momentum for graduated licensing that seems to be developing in the United States will result in meaningful legislative changes.

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